

Application Number 09/992,708
Amendment dated May 25, 2006
Responsive to Office Action mailed January 25, 2006

REMARKS

This Amendment is responsive to the Office Action dated January 25, 2006. Applicant has amended claims 1-3, 7, 15-17, 21, 29, 31, 33, 35, 38 and 39-41. Applicant has also added new claims 43-46. Claims 1-46 are pending, with claims 9-14 and 23-28 being withdrawn due to restriction.

Claim Rejection Under 35 U.S.C. § 112

In the Office Action, the Examiner rejected claims 40 and 41 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More particularly, the Examiner rejected claims 40 and 41 because the phrase "the system control module" in each of these claims lacked antecedent basis.

Applicant has amended claims 40 and 41 for purposes of clarification. More particularly, Applicant has amended these claims to delete the word "system" from the above-identified phrase. Accordingly, each of claims 40 and 41 recites "the control module," which finds antecedent basis in recitation of "a control module" in independent claim 29, from which both of claims 40 and 41 depend.

Applicant submits that claims, as amended, particularly point out and distinctly claim the subject matter, as required by 35 U.S.C. § 112, second paragraph, and requests that the rejection of claims 40 and 41 under section 112 be withdrawn.

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Claim Rejection Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1-7, 15-21, 29-30, 32, and 34-41 under 35 U.S.C. § 102(e) as being anticipated by US 6,547,730 to Lin et al. (Lin).¹ Applicant respectfully traverses the rejection. Lin fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. § 102(e), and provides no teaching that would have suggested the desirability of modification to include such features.

Independent claims 1, 15 and 29

For example, Lin fails to disclose or suggest communication between internal modules within a medical device via an internal bus within the medical device using a USB protocol, as required by independent claims 1 and 15. Lin similarly fails to disclose or suggest a medical device comprising an internal bus within the medical device to transfer packets between internal modules within the medical device according to a USB protocol, as required by independent claim 29. Instead, in direct contrast to these requirements of the independent claims, Lin discloses communication between separate devices 204, 206 and 208 via an external bus 202 (FIG. 2-6).

In response to Applicant's previously-submitted arguments that Lin discloses communication between separate devices via an external bus, the Examiner maintained that Lin discloses internal modules and an internal USB bus within a medical device. The entirety of Examiner's argument in support of this position is: (1) Lin does not *explicitly* say that the devices are separate or that the bus is external; and (2) Lin uses the word "internal" in the claims when referring to devices that are within a system.² This argument is insufficient to support the conclusion that Lin discloses the above-identified requirements of Applicant's independent claims and, therefore, insufficient to support a prima facie case of anticipation.

¹ More particularly, the Examiner rejected the claims as anticipated by Lin as evidenced by Rosenberg et al. (US 5,734,373), Takinosawa (2003/0035473), Pasumansky et al. (US 6,826,639) and Fensore et al. (US 6,415,343). The Examiner argues that Lin inherently, rather than explicitly, discloses a number of the requirements of Applicant's claims. The Examiner cites the additional references as extrinsic evidence of the inherent disclosure within Lin. See MPEP 2131.01, section III. Notably, Takinosawa was filed after Applicant's filing date.

² Office Action, pages 5 and 6.

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The relevant inquiry is what Lin would have taught or suggested to one of ordinary skill in the art who considered it *in its entirety*. In other words, the mere presence or absence of a specific word is irrelevant, absent the *context* in which those words do or do not appear. When considering the entirety of Lin, it is overwhelmingly clear that one of ordinary skill would have considered Lin to teach USB communication between separate devices via an external bus, and not teach USB communication between internal devices via an internal bus within a medical device, as required by Applicant's independent claims.

For example, FIGS. 2-6 of Lin consistently and clearly illustrate separate devices 204, 206 and 208 coupled to an external bus 202. FIG. 3 most clearly demonstrates this teaching by illustrating three devices, which are obviously separately housed, connected to the bus 202. In the Office Action, the Examiner *acknowledged* that FIG. 3 appears to show separate external devices, but discounted this teaching because FIG. 3 is described as a "conceptual diagram."

Again, the relevant inquiry is what Lin would have taught or suggested to one of ordinary skill in the art. FIG. 3 teaches a concept to one of ordinary skill, which is in fact the overriding concept taught throughout Lin. The concept taught by FIG. 3, and indeed the entirety of Lin, is use of an external serial bus 202 for communication between separately housed devices of an ultrasound system.

When considered in the context of the other figures of Lin, the consistency of the teaching of FIG. 3 with the rest of the Lin disclosure becomes clear. FIG. 2 is a block diagram illustrating three separate devices 204, 206 and 208 coupled to the external bus 202, and textually describing the functions performed by those three devices. FIG. 3 is a diagram illustrating conceptually what those three separate devices coupled to external bus 202 might actually look like, including respective housings and form factors for each of the separate devices. FIGS. 4-6 of Lin are block diagrams for each of the separate devices 204, 206, 208 respectively. FIGS. 4-6 illustrate that each of the separate devices includes respective internal components, such as respective internal microcontrollers, coupled by internal, non-USB buses (e.g., bus 504 in FIG. 5), and a single interface (416, 508, 602) to allow communication with the other devices via the external bus 202.

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The fact that Lin teaches separate devices and an external bus, as opposed to internal modules and an internal bus within a single medical device, is evident throughout the specification of Lin as well. For example, at col. 5, ll. 49-59, Lin teaches:

Although three ultrasound devices 204, 206, and 208 are shown in FIG. 2, it is to be appreciated that there may be many more such ultrasound devices, *or as few as two devices*, coupled to the ultrasound information bus 202. For example, it is within the scope of the preferred embodiments that ultrasound scanner 204 and ultrasound engine 206 may be combined to share a single interface to the ultrasound information bus 202, or in general for any two or more of the ultrasound devices to be combined to share a single interface to the ultrasound information bus 202. (Emphasis added)

In other words, recognizing that three separately-housed devices are depicted and described throughout the Lin application, Lin indicates two of the separate devices may be combined to form a single device, i.e., within a single housing and single interface to the external bus. However, Lin is clear that there must be at least two separate devices coupled to an external bus.

In sum, there is overwhelming evidence throughout the entirety of Lin that Lin is specifically directed to and teaches separate devices communicating via an external bus. Further, there is nothing within Lin that suggests the contrary. In other words, there is no teaching within Lin suggesting USB communication between internal modules within a medical device via an internal bus within the medical device, as required by Applicant's independent claims.

The Examiner essentially rests her conclusion that Lin does teach or suggest this requirement on the spurious appearance of the word "internal" in claim 12 of Lin. However, the Examiner must consider the appearance of this word in the claims in the context of the rest of Lin disclosure to understand what the use of the word would have taught or suggested to one of ordinary skill. When properly considered in the context of the entire disclosure, it is clear that the use of the word "internal" in claim 12 would not have suggested the requirements of Applicant's independent claims to one of ordinary skill in the art.

In particular, as discussed above, the entirety of the Lin disclosure, including FIGS. 2 and 3, teaches separate devices and an external bus, as opposed to internal modules and an internal bus within a single medical device. Claim 12 recites a *system*, as opposed to a device, that exactly maps to the system depicted in figures, e.g., a system (200) comprising devices 204, 206 and 208 that, although internal to the claimed system, are separate, and therefore coupled by an

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external bus 202. Further, the word "internal" appears to be used to distinguish the separate devices and bus *within* an ultrasound imaging system from the other similar systems that may be coupled to the claimed system by an Intranet LAN and Global Internet connections, as depicted in FIG. 7 of Lin and described with reference to the accompanying text. Thus, when considered in its context, one of ordinary skill would have understood the word "internal" in claim 12 of Lin to mean "within a system of separate devices," such as the systems described and depicted throughout the Lin disclosure, as opposed to "within a single device," which is not suggested anywhere within the Lin disclosure. Accordingly, one of ordinary skill would not have considered the use of the word "internal" in claim 12 of Lin to have suggested USB communication by internal modules within a medical device via an internal bus within the medical device, as required by Applicant's independent claims.

Claim 30

As another example, claim 30 requires that the plurality of functional modules within a medical device comprises a therapy control module. Lin fails to disclose or suggest this requirement of claim 30. In particular, Lin discloses an ultrasound system, and does not suggest that the ultrasound system delivers therapy.

With respect to claim 30, the Examiner stated that Lin discloses a user interface module and a patient parameters module. Even if the Examiner's assertion were correct, it is irrelevant to the requirements of claim 30. Again, claim 30 requires a therapy control module.

Lin fails to disclose or suggest the requirements of Applicant's claims, including requirements of each of Applicant's independent claims 1, 15 and 29. For at least this reasons, the Examiner has failed to establish a prima facie case of anticipation of Applicant's claims 1-7, 15-21, 29-30, 32, and 34-41 under 35 U.S.C. § 102(e). Applicant respectfully requests that these rejections be withdrawn.

To the extent they are prior art, Applicant notes that none of the other references cited by the Examiner in support of the rejection under section 102 provides any teaching or suggestion that would have overcome the deficiencies of Lin with respect to Applicant's claims.

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Claim Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 8, 22, 31 and 42 under 35 U.S.C. § 103(a) as being unpatentable over Lin as applied to claims 1, 15 and 29 above, and further in view of US 6,148,233 to Owen et al. (Owen). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

With respect to claims 8, 22, 31 and 42, the Examiner argues that it would have been obvious to one of ordinary skill in the art to use a USB bus as taught in Lin to facilitate communication between modules of a defibrillator, such as that taught by Owen. However, the Examiner has cited no evidence supporting this assertion. For example, the Examiner has cited no evidence of a teaching or suggestion within the prior art that would have motivated one of ordinary skill to modify the Owen defibrillator to include the Lin USB bus. There is no suggestion within Lin to use the described ultrasound system external bus internally, much less internally within a defibrillator. Further, Owen does not even discuss what type of bus is used within the defibrillator described therein, much less suggest that modification would be appropriate or desirable.

It is well established that the Examiner bears the burden of establishing a prima facie case of obviousness.³ In doing so, the Examiner must determine whether the prior art provides a "teaching or suggestion to one of ordinary skill in the art to make the changes that would produce" the claimed invention.⁴ A prima facie case of obviousness is established only when this burden is met.

The Court of Appeals for the Federal Circuit specifically addressed the evidentiary standard required to uphold an obviousness rejection.⁵ In particular, the Federal Circuit stated: "[the] factual question of motivation is material to patentability, and (can) not be resolved on subjective belief and unknown authority."⁶ This finding must be based upon substantial evidence,

³ *In re Oetiker*, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

⁴ *In re Chu*, 36 USPQ2d 1089, 1094 (Fed. Cir. 1995).

⁵ *In re Lee*, 61 USPQ2d 1430 (CAFC 2002).

⁶ *Id.* at 1434.

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and not subjective musings or conjecture by the Examiner.⁷ Deficiencies in the evidentiary record cannot be cured by general conclusions such as “general knowledge” or “common sense.”⁸ In other words, the Examiner cannot rely on unsupported, conclusory statements to close holes in the evidentiary record.⁹ Accordingly, unless the Examiner can establish an evidentiary record based on concrete prior art references that establish that it would have been obvious to a person with ordinary skill in the art to incorporate the USB bus taught by Lin in the defibrillator taught by Owen, claims 8, 22, 31 and 42 must be allowed.

Lacking the evidence required by Federal Circuit precedent, the Examiner instead relied on a legally invalid “design choice” argument. In particular, the Examiner argued that inclusion of the Lin bus in the Owen defibrillator would have been obvious because it “would amount to mere substitution of one functional equivalent for another that would work equally well on the Owen device.” Design choice arguments, like the Examiner’s in this case, are legally invalid because they invariably are used to overcome a lack of the evidence of motivation required to establish a prima facie case of obviousness, and are generally supported by vague conclusions which are themselves unsupported by evidence.

For example, in the present case, the Examiner’s conclusion of obviousness rests on two completely unsupported assertions. First, the Examiner asserts that the Lin bus is a functional equivalent of the Owen bus. Second, the Examiner asserts that the Lin bus would work equally well (as the Owen bus) in the Owen device.

There is nothing within the evidentiary record to support either of these assertions. Owen does not even describe a protocol or technique used for communication within the defibrillator described therein. Therefore, it is impossible for the Examiner to state that one of ordinary skill would have considered the USB bus of Lin to be a functional equivalent to the unspecified bus in Owen, or recognized that the Lin bus would have worked equally as well in the Owen defibrillator. Such unsupported conjecture cannot support a prima facie case of unpatentability.

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

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For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 8, 22, 31 and 42 under 35 U.S.C. § 103(a). Withdrawal of these rejections is requested.

New Claims:

Applicant has added claims 43-46 to the pending application. No new matter has been added by the new claims. The applied references fail to disclose or suggest the inventions defined by Applicant's new claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed inventions.

For example, for the reasons discussed above, the applied references fail to disclose or suggest an external defibrillator comprising an internal control module, internal functional modules, and an internal bus within the defibrillator, as required by new independent claim 43. Further, new claim 43 recites that the defibrillator includes a medical device enclosure, and requires that each of the internal control module, internal functional modules, and internal bus are located within the medical device enclosure. Lin and the other cited references do not disclose or suggest this additionally requirement of claim 43. For example, Lin does not suggest that the devices 204, 206 and 208 and bus 202 are located within a common medical device enclosure. Further, Lin does not disclose or suggest an internal control module within a medical device enclosure that communicates with an external device outside the medical device enclosure via an internal bus within the enclosure and an expansion module, as required by new dependent claim 45.

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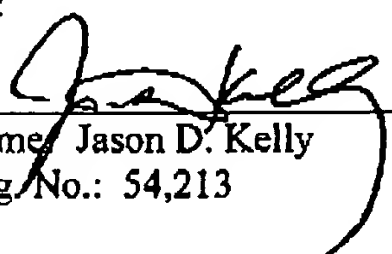
CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date: May 25, 2006

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